

# IBM Tivoli Storage Manager

*Leverage next-generation data storage and unified recovery management capabilities*



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## Highlights

- Help simplify the protection and management of your data, even as it continues to grow exponentially
- Address business continuity by helping to shorten backup and recovery times and helping to maximize application availability with advanced data recovery management technologies
- Employ source and target data deduplication and a hierarchy of storage to help increase bandwidth efficiencies and conserve storage resources
- Help control storage management costs with ease-of-use features and unified recovery management across the entire enterprise

Businesses in today's environment face a continual explosion in data growth rates. The ability to successfully manage data has become a competitive necessity, and with increasingly stringent compliance demands and the growing complexity of the storage infrastructure, storage administrators are feeling the pressure. While the costs of maintaining storage infrastructure continue to increase, IT budgets often do not.

IBM Tivoli® Storage Manager 6 is a family of products that helps businesses manage and control the "information tidal wave" by delivering a single point of control and administration for storage management needs. This advanced, highly scalable product helps increase the efficiency of your IT operations and helps cut costs related to storage management by providing a wide range of data protection, recovery management, and monitoring capabilities using policy-based automation, including:

- Backup and recovery.
- Online database and application protection.
- Disaster recovery.
- Data reduction.
- Bare-machine recovery.
- Space management.
- Archiving and retrieval.



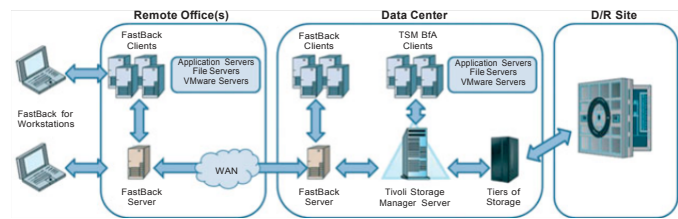
Tivoli Storage Manager 6 delivers centralized, Web-based administration and intelligent data move-and-store techniques to help ease storage management. The product scales from small to very large installations, and supports more than 50 operating system versions and hundreds of devices. It also facilitates a multitude of connections, including Internet, wide area networks (WANs), local area networks (LANs) and storage area networks (SANs).

Tivoli Storage Manager 6 helps organizations improve business continuity, and reduce the risks of data loss, minimize complexity, better manage costs and address strict compliance requirements. With Tivoli Storage Manager 6 you can:

- Reduce the amount of data being stored with progressive incremental backups and deduplication.
- Efficiently manage multi-location backups.
- Automate data migration between storage tiers and the retention of archives.
- Generate daily-updated disaster recovery plans.
- Implement retroactive policy changes.
- Automatically distribute upgrades to Microsoft® Windows® client agents.

Tivoli Storage Manager 6 continues IBM's leadership in data protection, with scalability to manage up to 1 billion objects, advanced integration with VMware® and Windows environments, and simplified management through next-generation reporting and near real-time monitoring.

Tivoli Storage Manager 6 is the core component of an enterprise-wide data protection and recovery management solution set. Tivoli Storage Manager works seamlessly with Tivoli Storage Manager FastBack, which provides enhanced data protection and recovery of critical Microsoft Windows and Linux® servers in remote offices and in the data center,



IBM Tivoli Storage Manager is the core component of an enterprise-wide data protection and unified recovery management system.

with Tivoli Storage Manager FastBack for Workstations to automatically and continuously protect desktop and laptop systems, and with Tivoli Storage FlashCopy® Manager for hardware-assisted, application-aware snapshots.

### Leading-edge data reduction features

Tivoli Storage Manager 6 helps you address the relentless growth in the amount of data being retained through a number of leading-edge capabilities, including:

- Progressive incremental backups with an incremental forever backup method that eliminates redundant periodic full backups.
- Built-in data deduplication can eliminate redundant files and subfiles. Source-side data deduplication reduces the amount of data sent from client systems to the Tivoli Storage Manager Server. Target-side data deduplication eliminates redundant data stored by the Tivoli Storage Manager Server. Combined, these advanced features reduce bandwidth and storage requirements.
- Seamless integration with popular Virtual Tape Library systems, such as the IBM ProtecTIER® Deduplication Solutions, that employ in-line data deduplication for long-term retention of large data sets.



## Can increase efficiency with a hierarchy of storage

In most storage management environments, managed data is trapped on the media to which it was originally backed up. Tivoli Storage Manager 6 manages data stored in a hierarchy of lower-cost storage, which helps conserve resources as automated policies migrate data to the appropriate media type, based on data value, access and retention requirements.

Tivoli Storage Manager 6 automatically manages the movement of the data onto new storage technology when introduced into the hierarchy, allowing you to remove old technology from the IT center. In addition to this storage hierarchy, the open application programming interface (API) of Tivoli Storage Manager 6 provides the ability to seamlessly manage many types of data. As soon as data is in the hierarchy, it can easily be moved from one storage device to another. Use Tivoli Storage Manager 6 for:

- **Backup** — backup and maintain numerous file versions to enable point-in-time recovery in the event of production storage device failure, data errors or accidental file deletions.
- **Archive** — archive files to the hierarchy of storage for a specified amount of time, after which they automatically expire, based on policies set for each data type.
- **Space management** — IBM Tivoli Storage Manager 6 for Space Management identifies and moves less-frequently accessed and inactive files to the hierarchy of storage. IBM Tivoli Storage Manager 6 HSM for Windows enables you to migrate lesser-used Windows files without disrupting your end users.

- **Data retention enforcement** — IBM System Storage™ Archive Manager 6 prevents stored data from being changed or deleted prior to expiration dates or while a "hold" is placed on the content, helping organizations address legal and regulatory requirements.

## Leverage an advanced architecture for robust functionality

Tivoli Storage Manager 6 provides superior functions for managing data because it utilizes a fully integrated enterprise-class IBM DB2® relational database and transaction log to track the managed data's metadata. Other storage optimization features help reduce capacity requirements, speed installations, and automate backup and recovery processes.

### Storage features

- Intelligent data movement to save tapes, processing cycles and network bandwidth.
- Flexible storage pools to migrate data from one storage pool to another based on policies set up to reflect business needs.
- Synchronous and asynchronous duplication of backup data via copy pools.
- SAN exploitation for sharing of storage resources. Direct-to-disk storage so the number of client machines moving data is not controlled by how many tape drives are available, nor is the data fragmented by cumbersome multiplexing techniques.
- Reclamation of space to free up partially used tapes by moving active files to other tape volumes.
- Seamless scalability to support the growing data protection and recovery management needs of almost any organization.



### Backup and recovery features

- Collocation to dedicate a set of tapes to a single user or group of users for faster recovery.
- Offsite copying for disaster recovery purposes.
- Better tape utilization through automated reclamation and migration.
- Re-startable backup and restore for interrupted operations.
- Journal-based backups to expedite the process and minimize processing overhead.
- Non-disruptive online image backup and restore.
- Rapid recovery by creating backup sets that consolidate files onto portable media.
- Automated backup schedules.
- Built-in and automated disaster recovery planning tools.
- Advanced integration with virtual server environments, including the vStorage VMware API.
- Intelligent, high-speed data protection features for popular e-mail, database and enterprise resource planning applications, including DB2, Oracle, SAP, Microsoft Exchange, SQL, Lotus® Domino®, etc.

### Help enhance data security

Storage administrators must ensure that data is backed up and secure, regardless of location, and that purposely erased data is irrecoverable. To help meet compliance requirements while maintaining productivity of personnel, Tivoli Storage Manager 6 generates, encrypts, stores and manages encryption keys for Tivoli Storage Manager 6 clients and application protection modules. Furthermore, Tivoli Storage Manager compresses and encrypts data that is being moved into the hierarchy of storage. Enhanced security features within Tivoli Storage Manager 6 include:

- Automated data security encryption key management to help relieve the burden of manually tracking encryption keys and passwords.
- In-flight 256-bit AES data encryption between client and server using Secure Socket Layer (SSL).

- Leverage tape-drive encryption to offload encryption from the system to the tape drive for faster backups and restores.
- Shredding of data on disk, or the overwriting of deleted data, helps to prevent future discovery.

### Can increase visibility into the data protection environment

Tivoli Storage Manager 6 provides advanced features for operational monitoring and historical trends reporting. A customizable dashboard provides graphical views, while reports can be created in multiple formats such as HTML, Adobe® Portable Document Formatting (PDF) and comma-separated values (CSV). Based on open source Eclipse Business Intelligence Reporting Tools (BIRT), this feature allows administrators to define their own customized reports.

### Help speed backups and disaster recovery

Tivoli Storage Manager 6 offers numerous features to facilitate backups and recovery, including disk storage pools, backup sets, volume level backups, offsite copies, collocation and an integrated approach to protection of VMware environments. Backup sets are portable images created on the Tivoli Storage Manager server from existing backups. They can be used to:

- Create media for rapid recovery or instant archives.
- Restore individual files or point-in-time backups of data to client systems locally, independent of or with a Tivoli Storage Manager server.
- Create copies for long-term retention from backup versions already stored on the server.

The "active data pool" storage feature stores the active version of data in a virtualized group of tape and optical media. This helps to conduct faster client restores and to greatly reduce the amount of data taken off-site.



## Advanced protection and recovery of Virtual Servers

Tivoli Storage Manager 6 provides a full image backup of virtual machines for enhanced business continuity and disaster recovery. It integrates with VMware Consolidated Backup to coordinate the movement of virtual machine data from the VMware Consolidated Backup proxy server to tape devices, and leverages the vStorage API for Data Protection for file-level backup and recovery. Administration is simplified through auto-discovery of new VM guest deployments. Additionally, Tivoli Storage Manager 6 supports the Microsoft Volume Shadow Copy Service to perform full-image snapshots of virtual machines in Microsoft Hyper-V environments.

## Use NDMP backup images for onsite or offsite vaulting

To heighten disaster recovery capabilities, use Tivoli Storage Manager 6 to protect data on NAS devices by using Network Data Management Protocol (NDMP). Use Tivoli Storage Manager to:

Implement NDMP backups of NAS devices directly to attached tape drives or tape drives shared with Tivoli Storage Manager 6.

Send NDMP backups to a Tivoli Storage Manager server to be stored on disk or tape.

Create offsite copies of NDMP backups.

Transfer NDMP-generated data to other storage media to reclaim unused space or to migrate data to more appropriate media in the storage hierarchy.

## Implement advanced backup and recovery functions

To help meet increasingly stringent recovery point objectives and recovery time objectives, Tivoli Storage Manager 6 provides advanced backup and recovery capabilities, including:

- Individual item-level recovery for Microsoft Exchange databases.
- Individual object recovery for Microsoft Active Directory environments.
- Progressive-incremental backup of Microsoft Windows System Writer.
- File-level recovery for IBM System Storage N series and NetApp NAS environments.
- Efficient backup of very large SAP databases.
- Direct management of Tivoli Storage Manager FastBack Servers.

## Tivoli Storage Manager 6 for a smarter/greener data center

IBM Tivoli Storage Manager 6 is one of the premier data management solutions that leverage the capacity, performance and long-term retention features of the broad range of available tape systems. Magnetic tape is among the greenest of all storage technologies, in that tape can store vast quantities of data for long periods of time, while requiring only minimal environmental (power and cooling) support.



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## IBM Tivoli Storage Manager at a glance

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The Tivoli Storage Manager family of offerings includes:

**Tivoli Storage Manager** — automates data backup and restore functions, supports a broad range of platforms and storage devices, and centralizes storage management operations.

**Tivoli Storage Manager Extended Edition** — expands on backup, restore and archive abilities with data de-duplication and disaster recovery functionality.

**IBM Tivoli Storage Manager for Mail** — helps secure IBM Lotus® Domino® and Microsoft Exchange data, regardless of where or how it is stored.

**IBM Tivoli Storage Manager for Databases** — helps secure IBM Informix®, Oracle and Microsoft SQL data, no matter where or how it is stored.

**IBM Tivoli Storage Manager for Microsoft SharePoint®** — offers granular backup and recovery of your SharePoint business data and content.

**IBM Tivoli Storage Manager HSM for Windows** — provides Hierarchical Storage Management with a policy-based management system for migrating Windows files economically and transparently.

**IBM Tivoli Storage Manager for Enterprise Resource Planning** — helps protect vital SAP R/3 system data efficiently, consistently and reliably.

**IBM Tivoli Storage Manager for Space Management** — automatically moves inactive data to free online disk space for important active data.

**IBM Tivoli Storage Manager for Storage Area Networks** — allows SAN-connected Tivoli Storage Manager servers and client computers to make maximum use of their direct network connection to storage.

**IBM Tivoli Storage Manager for System Backup and Recovery** — offers a comprehensive system backup, restore and reinstallation tool that provides bare-metal restore capabilities.

**IBM Tivoli Storage Manager FastBack™** — provides a continuous data protection and recovery management platform for Microsoft Windows servers.

**IBM Tivoli Storage Manager FastBack for Microsoft Exchange** — provides the ability to quickly and easily recover granular Microsoft Exchange data objects.

**IBM Tivoli Storage Manager FastBack for Bare Machine Recovery** — restores entire systems, whether to comparable hardware, dissimilar hardware, or a virtual machine.

**IBM Tivoli Storage Manager FastBack Center** — combines the features of the IBM Tivoli Storage Manager FastBack family of products into one solution.

**IBM Tivoli Storage Manager FastBack for Workstations** — provides continuous, automated backup of desktop and laptop workstations.

**IBM Tivoli Storage FlashCopy Manager** - application-aware snapshot backup and recovery management for IBM System Storage and systems with VSS-Writer support.

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## For more information

IBM Tivoli Storage Manager 6 is part of an extensive family of products that work together seamlessly. To learn more about IBM Tivoli Storage Manager 6, contact PLCS at [www.plcs.eu](http://www.plcs.eu)

## About Tivoli software from IBM

Tivoli software from IBM helps organizations efficiently and effectively manage IT resources, tasks and processes to meet ever-shifting business requirements and deliver flexible and responsive IT service management, while helping to reduce costs. The Tivoli portfolio spans software for security, compliance, storage, performance, availability, configuration, operations and IT lifecycle management, and is backed by world-class IBM services, support and research.

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